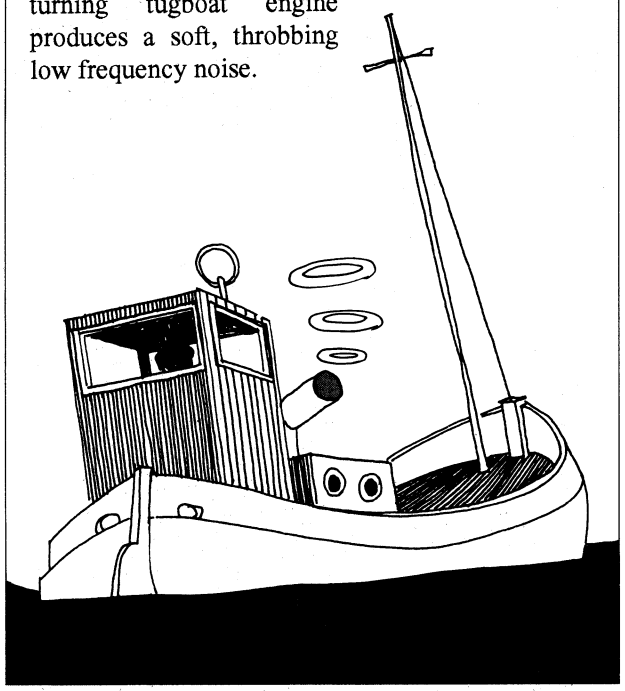
THE SLOWER THE REPETITIONS, THE LOWER THE FREQUENCIES OF THE NOISE

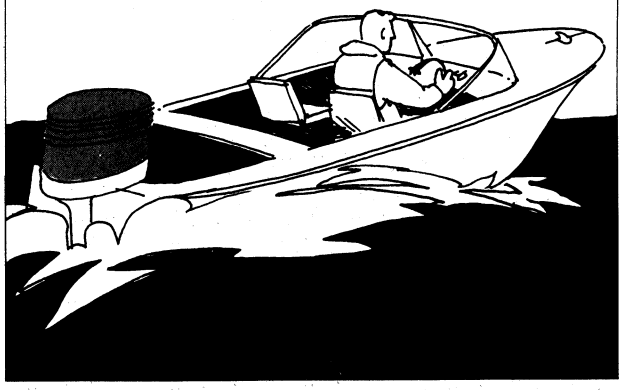
The amount of low frequency noise produced by a sound source depends primarily on the rate at which changes in force, pressure, and speed are repeated. The longer the interval between repetitions, the lower the frequencies of the noise generated. The level of the noise depends upon the magnitude of the changes.

Principle

The exhaust from a slowly turning tugboat engine produces a soft, throbbing low frequency noise.



An outboard motor's rapidly repeated firing produces higher frequency noise.



EXAMPLE

Two gear wheels are the same size, but they have different numbers of teeth. The principal source of noise in a gearbox is the contact of one tooth with the corresponding tooth on the gear wheel in mesh with it. If the gear wheels rotate at the same speed, the gear with fewer teeth will produce a lower frequency noise.